

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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SEP 26 2002

Applicants:

Michael Sworin and James C. Jenson

Application No.:

10/082,815

Group Art Unit:

1645

TECH CENTER 1600/2900

Filed:

February 22, 2002

Examiner:

No Yet Assigned

Confirmation No.:

1636

Title:

INHIBITORS OF BINDING BETWEEN PROTEINS AND  
MACROMOLECULAR LIGANDS

AS  
Plunkett  
10/22/02

|   |           |
|---|-----------|
| CERTIFICATE OF MAILING  |           |
| I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, P.O. Box 2327, Arlington, VA 22202 |           |
| on  | 9/23/02   |
| Date  | Signature |
| SANDRA BRIGHAM  |           |
| Typed or printed name of person signing certificate   |           |

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents  
P.O. Box 2327  
Arlington, VA 22202

Sir:

This Information Disclosure Statement is submitted:

☐ under 37 CFR 1.129(a), or

(First/Second submission after Final Rejection)

☒ under 37 CFR 1.97(b), or

(Within any one of the following time periods: three months of filing national application (other than a CPA) or date of entry of the national stage in an international application; or before the mailing date of a first office action on the merits in a non-provisional application, including a CPA, or a Request for Continued Examination).

☐ under 37 CFR 1.97(c) together with either:

☐ a Statement under 37 CFR 1.97(e), as checked below, or

☐ a \$180.00 fee under 37 CFR 1.17(p), or

(After the 37 CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)

☐ under 37 CFR 1.97(d) together with:

☐ a Statement under 37 CFR 1.97(e), as checked below, and

☐ a \$180.00 fee under 37 CFR 1.17(p), or

(Filed after final action or notice of allowance, whichever occurs first, but on or before payment of the issue fee)

☐ under 37 CFR 1.97(i):

Applicant requests that the IDS and cited reference(s) be placed in the application filewrapper.

(Filed after payment of issue fee)

Statement Under 37 CFR 1.97(e)

- ☐ Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement; or
- ☐ No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

Statement Under 37 CFR 1.704(d) (Patent Term Adjustment)

Applies to original applications (other than design) filed on or after May 29, 2000

- ☐ Each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.
- ☒ Enclosed herewith is form PTO-1449:
  - ☒ Copies of the cited references are enclosed.
  - ☐ Copies of cited references are enclosed except those entered in prior application, U.S. Application No. [ ], to which priority under 35 U.S.C. 120 is claimed. [The earlier application contains copies of the cited references.]
  - ☐ The listed references were cited in the enclosed International Search Report in a counterpart foreign application.
  - ☐ The "concise explanation" requirement (non-English references) for reference(s) [ ] under 37 CFR 1.98(a)(3) is satisfied by:
    - ☐ the explanation provided on the attached sheet.
    - ☐ the explanation provided in the Specification.
    - ☐ submission of the enclosed International Search Report.
    - ☐ submission of the enclosed English-language version of a foreign Search Report and/or foreign Office Action.
    - ☐ the enclosed English language abstract.

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☐ Applicant requests that the following non-published pending applications be considered:

Examiner's  
Initials

\_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]  
\_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]  
\_\_\_\_ U.S. Patent Application No. [ ], by [inventor(s)], filed [ ], Docket No.: [ ]

\_\_\_\_  
Examiner

\_\_\_\_  
Date

- ☐ A copy of each above-cited application, including the current claims, is enclosed.
- ☐ A copy of each above-cited application, including the current claims, is enclosed, except those entered in prior application, U.S. Application No. [ ], to which priority under 35 U.S.C. 120 is claimed.

The Examiner is requested to return a copy of the above list of pending applications indicating which references were considered with the next office communication.

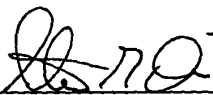
It is requested that the information disclosed herein be made of record in this application.

Method of payment:

- ☐ A check for the fee noted above is enclosed, or the fee has been included in the check with the accompanying Reply. A copy of this Statement is enclosed.
- ☐ Please charge Deposit Account 08-0380 in the amount of \$[ ]. A copy of this Statement is enclosed.
- ☒ Please charge any deficiency in fees and credit any overpayment to Deposit Account 08-0380.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By 

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Concord, MA 01742-9133

Dated:

September 23, 2002

PTO-1449 REPRODUCED

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

September 20, 2002 SEP 25 2002

(Use several sheets if necessary)

ATTORNEY DOCKET NO.  
2791.1003-007

APPLICATION NO.  
10/082,815

APPLICANT  
Michael Sworin, et al.

FILING DATE  
February 22, 2002

GROUP  
1645

SEP 26 2002

TECH CENTER 1600/2900

U.S. PATENT DOCUMENTS

| EXAM-<br>INER<br>INI-<br>TIAL |    | DOCUMENT NUMBER | DATE     | NAME            | CLASS | SUB-<br>CLASS | FILING DATE<br>IF<br>APPROPRIATE |
|-------------------------------|----|-----------------|----------|-----------------|-------|---------------|----------------------------------|
|                               | AA | 5,474,911       | 12/12/95 | Pontius         |       |               |                                  |
|                               | AB | 5,612,034       | 3/18/97  | Pouletty et al. | 424   | 184.1         |                                  |
|                               | AC | 5,698,401       | 12/16/97 | Fesik et al.    | 435   | 7.1           |                                  |
|                               | AD | 5,763,595       | 6/9/98   | Gold et al.     | 536   | 2.1           |                                  |
|                               | AE | 5,804,390       | 9/8/98   | Fesik et al.    | 435   | 7.1           |                                  |
|                               | AF | 5,843,440       | 12/1/98  | Pouletty et al. | 424   | 133.1         |                                  |
|                               | AG | 5,891,643       | 4/6/99   | Fesik et al.    | 435   | 7.1           |                                  |
|                               | AH | 5,958,703       | 9/28/99  | Dower et al.    | 435   | 7.1           |                                  |
|                               | AI | 5,962,219       | 10/5/99  | Gold et al.     | 435   | 6             |                                  |
|                               | AJ | 5,989,827       | 11/23/99 | Fesik et al.    | 435   | 7.1           |                                  |
|                               | AK | 6,043,024       | 3/28/00  | Fesik et al.    | 435   | 4             |                                  |

FOREIGN PATENT DOCUMENTS

|  |    | DOCUMENT NUMBER | DATE     | COUNTRY | CLASS | SUB-<br>CLASS | TRANSLATION<br>YES NO |
|--|----|-----------------|----------|---------|-------|---------------|-----------------------|
|  | AL | WO 97/25074     | 17-7-97  | PCT     |       |               |                       |
|  | AM | WO 97/29372     | 14-8-97  | PCT     |       |               |                       |
|  | AN | WO 98/11437     | 19-3-98  | PCT     |       |               |                       |
|  | AO | WO 98/19162     | 7-5-98   | PCT     |       |               |                       |
|  | AP | WO 98/46270     | 22-10-98 | PCT     |       |               |                       |
|  | AQ | WO 98/47002     | 22-10-98 | PCT     |       |               |                       |

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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| AR | Way, J. C., "Covalent modification as a strategy to block protein-protein interactions with small-molecule drugs," <i>Current Opinion in Chemical Biology</i> , 4:40-46 (2000).  |
| AS | Krantz, A., Diversification of the drug discovery process," <i>Nature Biotechnology</i> , Vol. 16:1294 (1998).   |
| AT | Krantz, A., et al., "Drug Pharmacophores Covalently Linked to the Red Cell Surface are Active Without Prior Release. Drug Targeting of Renin with a Synthetic Ligand Conjugated to Red Blood Cells," <i>Journal of Drug Targeting</i> , 7(2):113-130 (1999). |

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DATE CONSIDERED

PTO-1449 REPRODUCED

ATTORNEY DOCKET NO.  
2791.1003-007APPLICATION NO.  
10/082,815**RECEIVED**INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

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Michael Sworin et al.

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## U.S. PATENT DOCUMENTS

| EXAM-<br>INER<br>INI-<br>TIAL |     | DOCUMENT NUMBER | DATE    | NAME            | CLASS | SUB-<br>CLASS | FILING DATE<br>IF<br>APPROPRIATE |
|-------------------------------|-----|-----------------|---------|-----------------|-------|---------------|----------------------------------|
|                               | AA2 | 6,087,375       | 7/11/00 | Bridon et al.   | 514   | 314           |                                  |
|                               | AB2 | 6,103,233       | 8/15/00 | Pouletty et al. | 424   | 133.1         |                                  |
|                               | AC2 | 6,107,489       | 8/22/00 | Krantz et al.   | 548   | 338.1         |                                  |
|                               | AD2 | 5,705,337       | 1/6/98  | Gold et al.     | 435   | 6             |                                  |
|                               | AE2 |                 |         |                 |       |               |                                  |

## FOREIGN PATENT DOCUMENTS

|  |     | DOCUMENT NUMBER | DATE    | COUNTRY | CLASS | SUB-<br>CLASS | TRANSLATION<br>YES NO |
|--|-----|-----------------|---------|---------|-------|---------------|-----------------------|
|  | AL2 | WO 99/24074     | 20-5-00 | PCT     |       |               |                       |
|  | AM2 | WO 99/24076     | 20-5-99 | PCT     |       |               |                       |
|  | AN2 | WO 99/24462     | 20-5-99 | PCT     |       |               |                       |

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

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|--|-----|--|--|--|--|--|--|
|  | AU  | Krantz, A., "Red Cell-Mediated Therapy: Opportunities and Challenges," <i>Blood Cells, Molecules, and Diseases</i> , 23(3):58-68 (1997).   |  |  |  |  |  |
|  | AV  | Krantz, A., "Peptidyl (Acyloxy)methanes as Quiescent Affinity Labels for Cysteine Proteinases," <i>Methods in Enzymology</i> , 244:656-671 (1994).   |  |  |  |  |  |
|  | AW  | Weir, M. P., et al., "Novel Natural Product 5,5-trans-Lactone Inhibitors of Human $\alpha$ -Thrombin: Mechanism of Action and Structural Studies," <i>Biochemistry</i> , 37:6645-6657 (1998).  |  |  |  |  |  |
|  | AX  | Hemmerich, S., et al., "Identification of Residues in the Monocyte Chemotactic Protein-1 That Contact the MCP-1 Receptor, CCR2," <i>Biochemistry</i> , 38:13013-13025 (1999).  |  |  |  |  |  |
|  | AY  | Finch, H., et al., "5,5-TRANS LACTONE-CONTAINING INHIBITORS OF SERINE PROTEASES: IDENTIFICATION OF A NOVEL, ACYLATING THROMBIN INHIBITOR," <i>Bioorganic &amp; Medicinal Chemistry Letters</i> , 8:2955-2960 (1998).                       |  |  |  |  |  |
|  | AZ  | Montecclaro, F.S., et al., "The Amino-terminal Domain of CCR2 Is Both Necessary and Sufficient for High Affinity Binding of Monocyte Chemoattractant Protein 1," <i>The Journal of Biological Chemistry</i> , 272(37): 23186-23190 (1997). |  |  |  |  |  |
|  | AR2 | Tilley, J.W., et al., "Identification of a Small Molecule Inhibitor of the IL-2/IL-2R $\alpha$ Receptor Interaction Which Binds to IL-2," <i>J. Am. Chem. Soc.</i> , 119:7589-7590 (1997).   |  |  |  |  |  |

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APPLICANT  
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| EXAM-<br>INER<br>INI-<br>TIAL |     | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB-<br>CLASS | FILING DATE<br>IF<br>APPROPRIATE |
|-------------------------------|-----|-----------------|------|------|-------|---------------|----------------------------------|
|                               | AF2 |                 |      |      |       |               |                                  |
|                               | AG2 |                 |      |      |       |               |                                  |
|                               | AH2 |                 |      |      |       |               |                                  |
|                               | AI2 |                 |      |      |       |               |                                  |
|                               | AJ2 |                 |      |      |       |               |                                  |

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|  |     | DOCUMENT NUMBER | DATE     | COUNTRY | CLASS | SUB-<br>CLASS | TRANSLATION<br>YES NO |
|--|-----|-----------------|----------|---------|-------|---------------|-----------------------|
|  | AO2 | WO 99/24075     | 20-6-99  | PCT     |       |               |                       |
|  | AP2 | WO 99/31265     | 24-6-99  | PCT     |       |               |                       |
|  | AQ2 | WO 99/48536     | 30-9-99  | PCT     |       |               |                       |
|  | AL3 | WO 99/64032     | 16-12-99 | PCT     |       |               |                       |
|  | AM3 | WO 99/64036     | 16-12-99 | PCT     |       |               |                       |
|  | AN3 | WO 99/66944     | 29-12-99 | PCT     |       |               |                       |
|  | AO3 | WO 00/00823     | 6-1-00   | PCT     |       |               |                       |
|  | AP3 | WO 00/39585     | 6-7-00   | PCT     |       |               |                       |

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| AS2 | Skelton, N. J., et al., "Structure of a CXC chemokine-receptor fragment in complex with interleukin-8," <i>Structure</i> 7(2):157-168 (1999).                                |
| AT2 | Shuker, S.B., et al., "Discovering High-Affinity Ligands for Proteins: SAR by NMR," <i>Science</i> , 274:1531-1534 (1996).   |
| AU2 | Steitz, S.A., et al., "Mapping of MCP-1 functional domains by peptide analysis and site-directed mutagenesis," <i>FEBS Letters</i> , 430(158-164 (1998).                     |
| AV2 | Reckless, J., et al., "Identification of oligopeptide sequences which inhibit migration induced by a wide range of chemokines," <i>Biochem. J.</i> , 340:803-811 (1999).     |
| AW2 | Spaldin, V., et al., "The effect of enzyme inhibition on the metabolism and activation of tacrine by human liver microsomes," <i>Br J Clin Pharmacol</i> , 38:15-22, (1994). |

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